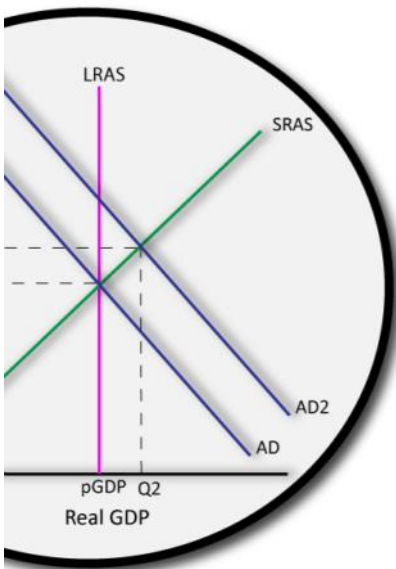




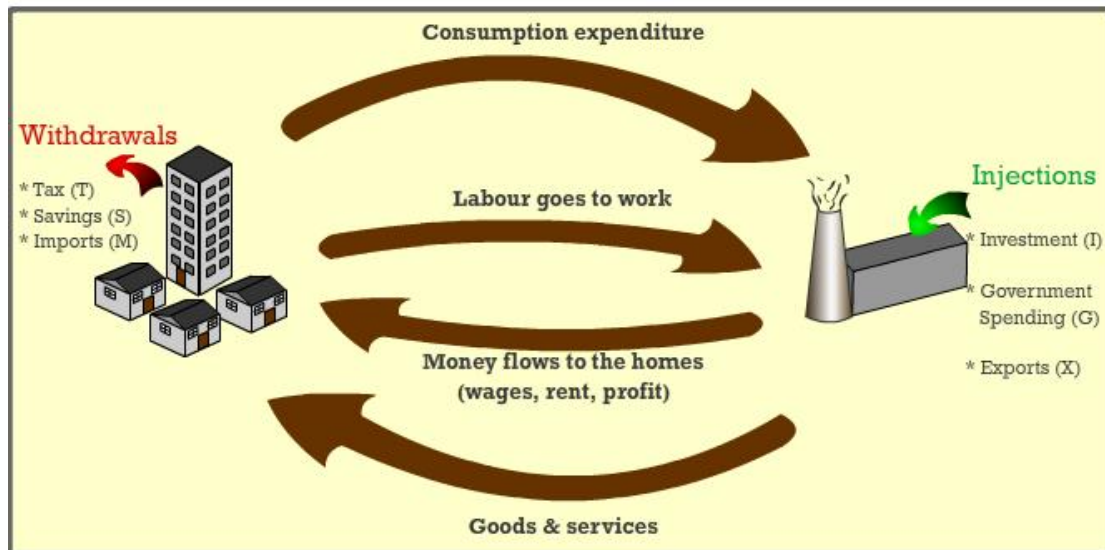
Unit 2—Macroeconomics



Macroeconomics

The Circular Flow of Income

- Shows us where the money flows in an economy
- In a perfect economy national income (wages), national expenditure (consumption) and national output (the value of all goods and services) are equal
- Helps to show **monetarist** beliefs and tracks the relationship between the above.
- Shows economic growth and contractions



Measuring National Income

- **Output Method**—this is adding up the value of all goods and services produced in a country (GDP)
- **Income Method**—this is adding up the total wages paid to everyone within an economy
- **Expenditure Method**—this is adding up the total spent by consumers in an economy.

Different Ways to Measure Economic Growth

- **GDP—(Gross Domestic Product):** the value of all goods and services produced within a country in a given time frame
- **GNP (Gross National Product)** —the value of all goods and services produced by a country's citizens in a given time frame
- **GDP per capita**—the value of all goods and services produced within a country in a given time frame divided by the population
- **NDP—Net Domestic Product**—the value of all goods and services produced within a country in a given time frame, minus depreciation (money spent on replacing capital)
- **Purchasing Power Parity GDP**

Problems with measuring Economic Growth

- Does not say *who* earns the GDP
- Does not say *what* is being made (military goods?)
- Does not make reference to *quality*
- Does not include negative externalities (unless Green GDP)
- Makes no reference to living standards

Macroeconomics

Individual Economic Development Indicators

- **Wealth Indicators** (the different GDPs), **Health Indicators** (Access to clean water, life expectancy, mortality rates, sanitation levels), **Income Indicators** (% of people below poverty line, absolute/relative poverty) **Education Indicators** (Access to education, literacy rate), **Demographic Indicators** (rate of population growth, birth rate, death rate, migration rate, dependency)

Composite Economic Development Indicators

- **HDI (Human Development Index)** —measured with **three** indicators:
 - 1) A long and healthy life: Life expectancy at birth
 - 2) Education index: Mean years of schooling and Expected years of schooling
 - 3) A decent standard of living: GNI per capita (PPP US\$)

Each calculation is given a score between 0-1, these are then added up and divided by 3 (the number of indicators). It is used by the UN Human Development Program and most development economists. The closer the score to 1, the more developed the country is.

- **HPI (Human Poverty Index)**—measures the poverty of a certain country. There are two measurements; one for developed countries, one for developing countries.

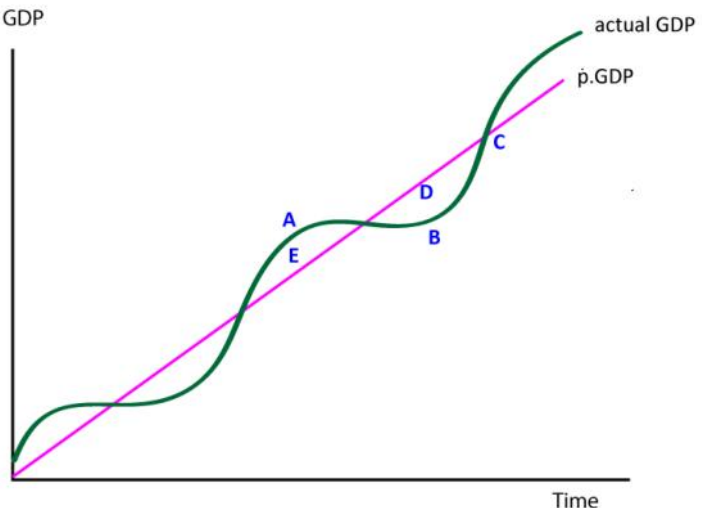
For developed countries it is measured with:	For developing countries it is measured with:
1) Likelihood of not reaching 60 2) % of illiterate adults 3) % living below poverty line 4) % of underemployment	1) Likelihood of not reaching 40 2) % of illiterate adults 3) Lack of basic standards of living (% of people with access to clean water, % with lack of health-care, % of children under 5 who are malnourished)

HPI thus focuses on deprivations, whereas HDI focuses on positive aspects. HPI is not based on income.

- **GEI (Gender Empowerment Measure)** focuses on how free women are to make contributions to society through a) their involvement in politics, b) % of women in economic decision making positions c) the income women earn

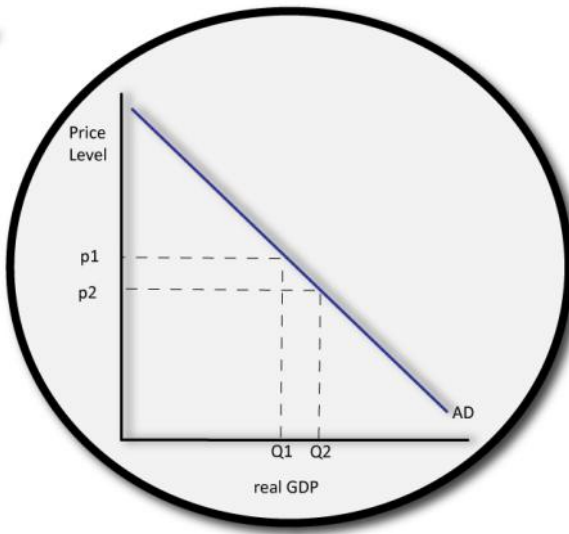
The Trade Cycle

- Helps explain how economies **expand** and **contract** over time. Explains an AD and AS GDP diagram
- Shows us inflationary and deflationary gaps (**E,D**) by comparing potential GDP (or Long-Run Equilibrium) with actual/real GDP to show economic growth/slowdown
- Shows **peaks (A)** (highest point in inflationary gap), **troughs (B)** (lowest point in deflationary gap), **double-dip recessions** (recessionary gap followed by another, greater)
- Shows how real incomes (or GDP) grow and shrink in an economy
- P.GDP correlates to LRAS (explained later)



Macroeconomics

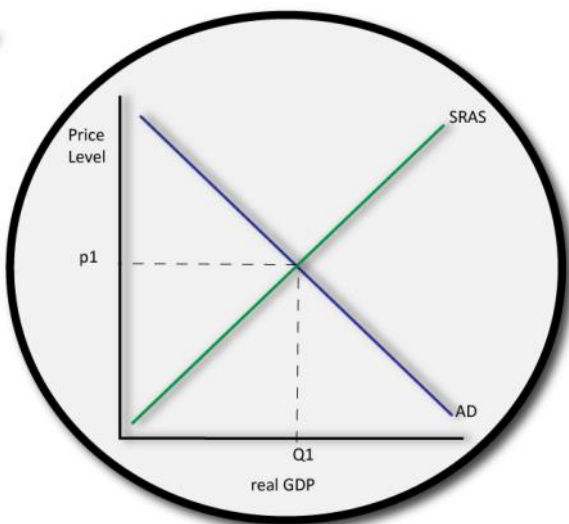
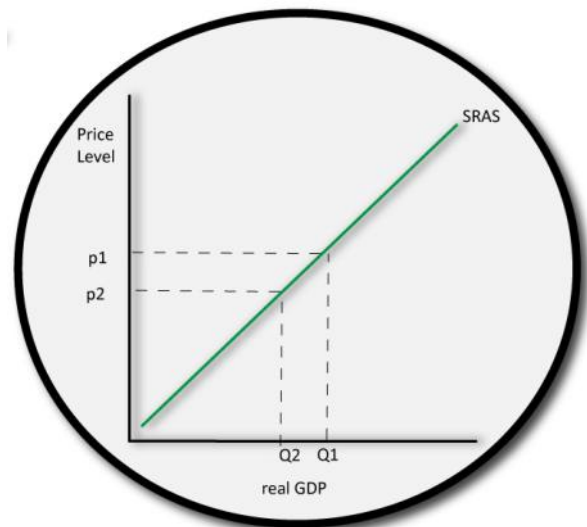
Aggregate Demand



- This is the total value of goods and services consumers in the economy are willing to pay at every given price in a certain time period. It is the demand of the whole economy.
- When prices in an economy fall, AD extends indicating consumers are willing to buy more at a cheaper price. This is an extension. When prices in an economy increase, AD contracts, indicating consumers are willing to buy less at a higher price. This is a contraction.
- AD shifts outwards—indicating more is demanded at the same price—for any reason that increases consumers disposable income (e.g. less income tax), population growth or an increase in perceived wealth.

SRAS Aggregate Supply

- This is the total value of goods and services producers in the economy are willing to produce at every given price in a certain time period. It is the supply of the whole economy.
- In the short run (the time period where more than two factors of production cannot change) it slopes upwards—as prices increase, firms wish to use more resources to produce more. This is an extension. If price decrease, firms wish to produce less, and so use less resources. This is a contraction.
- Supply for the economy shifts outwards—indicating more can be produced for the same price—if costs of production fall for any reason (wages decrease, business tax decreases, variable costs become cheaper), if there is an increase in any of our factors of production, or new technology is found. Finally, an increase in the quality of our factors of production (training, education, new fertilizers) will also shift AS out. Common reasons AS shifts inwards include war, or the reverse of the above factors.



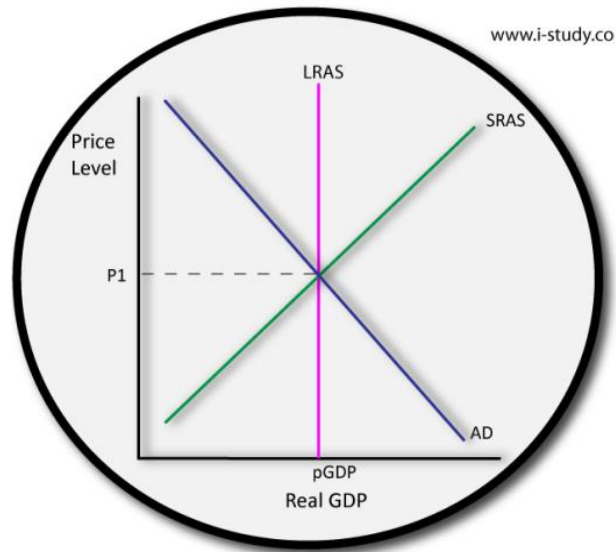
Macroeconomic Equilibrium

- This is where the total demanded of an economy (AD) is equal to the total supplied (AS). The price level is therefore a reflection of what consumers and producers are willing to pay or receive for goods and services. Note that there is not one 'price' (how could there be for all goods and services?) but a general price increase/decrease in percentage terms compared to the previous year (inflation/deflation).

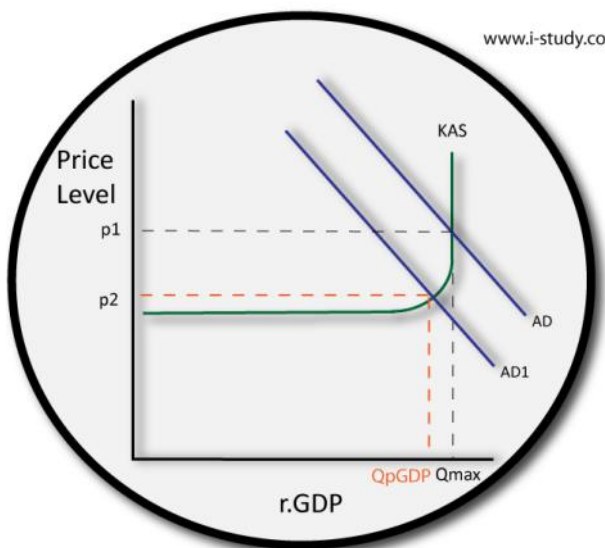
Macroeconomics

Neoclassical Economics

- Founded on the beliefs of Adam Smith, *A Wealth of Nations*.
- More right-wing, freedom of economy belief
- Claims that changes in AS are most important.
- When equilibrium is beyond the LRAS we have less unemployment than the natural rate of unemployment, and are therefore in an inflationary gap
- When equilibrium is before the LRAS we have more unemployment than the natural rate of unemployment, and are therefore in a recessionary gap.
- When at equilibrium and on the LRAS we are achieving potential GDP, have full employment level of resources with unemployment constant with the rate of natural unemployment
- Strong emphasis on supply-side policies—claim increasing demand only leads to inflation (AD increases, prices rise, workers ask for higher wage rate so supply decreases so output remains the same but prices rise).

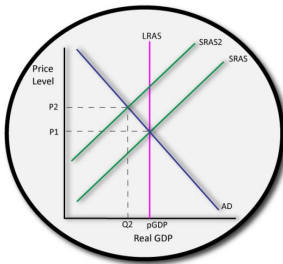


Keynesian Economics



- Founded on the beliefs of John Maynard Keynes, *A General Theory*
- More left-wing, big-government intervention
- Claims that AD is most important component of economy (esp. Investment—see accelerator theory)
- Claims there are 3 stages to the economy
- Flat segment: this is where we have many, many resources not being used. Unemployment is higher than the natural rate. We are in a recessionary gap. Even if AD increases, it has little influence on price as there are so many other available resources (e.g. if a farmer bought a piece of land, but there were 2m pieces still unsold, it is unlikely price of land would rise)
- Upward Curving Segment: this is where resources start to run out/bottleneck. Unemployment begins to reach its natural rate. There is full employment of resources at Qpotential (AD1 on diagram)
- Vertical Segment: this is where resources are all being used. We cannot extend supply further as every factor of production is in use. We are in an inflationary gap (AD on diagram).
- Unemployment is higher than the natural rate. Prices rise quickly if AD increases and output remains the same. When Qmax is reached we cannot supply any more as all resources are used.

Macroeconomics

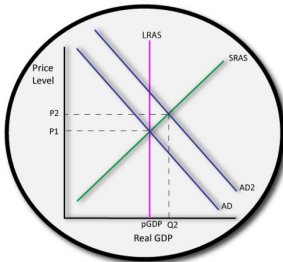


The Two Macroeconomic Policies

Governments can use two policies to change AS or AD in an economy:

Demand side policies (aimed at manipulating AD)

- Fiscal Policy (taxation and government spending)
- Monetary Policy (changing the supply of money)

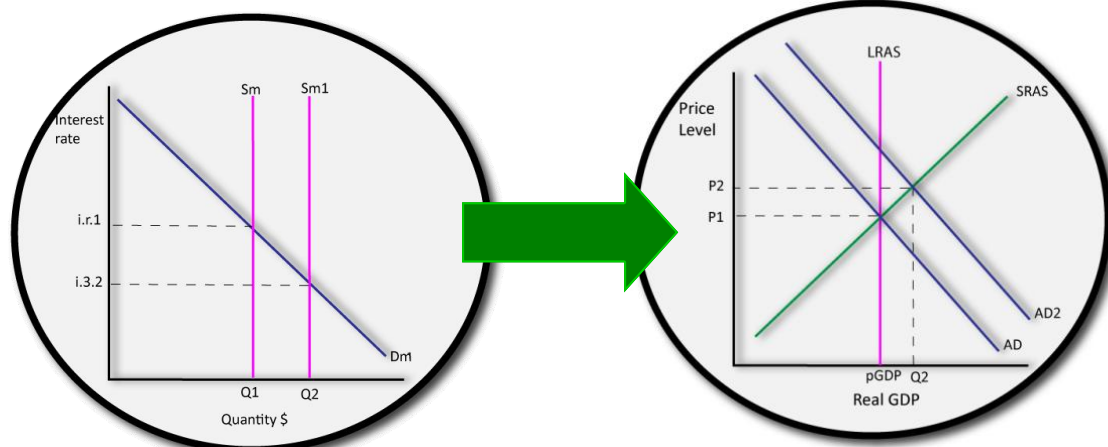


Supply-side policies (aimed at manipulating SRAS)

- Interventionist
- Market-Oriented

Fiscal Policy

- 1) **Expansionary fiscal policy** (aims at increasing AD to boost inflation, employment and real GDP)
 - Should be used in a recession to ensure we move to potential output
 - Either boosts government spending (to provide jobs and income) or reduces taxation or both
- 2) **Contractionary fiscal policy** (aims at decreasing AD to reduce inflation, employment and r.GDP)
 - Should be used when in an inflationary gap to get back to potential output and reduce inflation
 - Either reduces government spending or increases taxation or both to help generate revenue



Above: expansionary monetary policy to correct a fall in AD

Monetary Policy (refers to C and I of AD)

- 1) **Expansionary monetary policy (also known as 'easy-money policy')**
 - aims at increasing AD by increasing domestic supply of money so that interest rates lower and expenditure/consumption increases
 - Remember, domestic supply of money is fixed by the central bank. Printing more money therefore lowers its scarcity, making it less valuable and therefore cheaper to borrow.
- 2) **Contractionary monetary policy (also known as 'tight money policy')**
 - aims at decreasing AD by decreasing domestic supply of money so that interest rates rise and expenditure/consumption decreases
 - Remember, domestic supply of money is fixed by the central bank. Printing less money therefore increases its scarcity, making it more valuable and therefore more expensive to borrow.

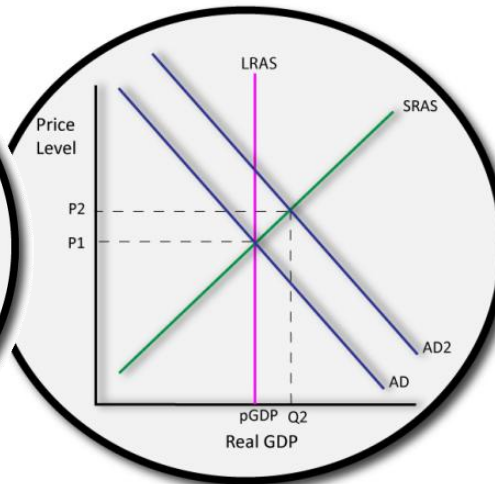
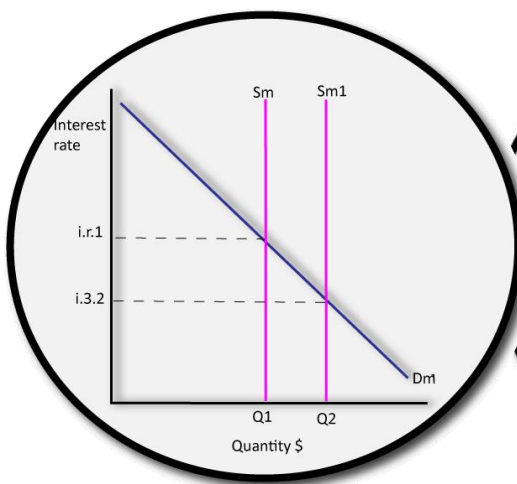
Macroeconomics

Advantages of Fiscal Policy

- **Prevents from double-dip recession** - J.M Keynes claimed that wages and prices were sticky downwards—they did not naturally rise once a deep recession set in. He claimed the government **had** to step in, to reboot the economy and reboots AD. If it doesn't the economy will go from one recession... to an even greater one. Fiscal policy can therefore prevent this.
- **Is a quick fix for rampant inflation** -Contractionary fiscal policy is quick and easy to implement; the government simply withdraws its contracts on building projects—this instantly causes prices to slump.

Disadvantages of Fiscal Policy

- **Time-lags**—To get involved, first the government must realize there **is** a problem, then they must identify where that is, then they must evaluate which policy to pursue, then they must implement it. This can take some time, especially if contracts are already set.
- **Politics**—Using deflationary fiscal policy is perhaps the most unfavourable political decision. Politicians are seen as being cruel by cutting jobs or raising taxes, and avoid it in order to get re-elected
- **Expense**—Inflationary fiscal policy is very expensive and requires large reserves of capital. Rising domestic prices may also hurt exports, worsening the balance of payments, making less money available.
- **Crowding Out**—If money is borrowed to pay for expansionary fiscal policies, then demand for money rises (D_m). If this happens, interest rates rise, creating less investment in the economy... effects of crowding out and MPC must first be calculated and this is hard to do.



- **Social Perceptions** - Lowering taxes in a recession is not necessarily beneficial because the MPC of a country in a recession is generally very low. This money will thus be saved instead of spent, causing it to leave the circular flow.

Advantages of Monetary Policy

- **No political constraints**—This is generally an invisible policy—people do not realize if there is less or more money in the economy, and therefore politicians may feel more comfortable with it as it does not create the impression of cuts or excessive spending. As the central bank is often semi-autonomous from the government, the blame often lies elsewhere too.
- **No crowding out** -Inflationary monetary policy does not cause crowding out, as it encourages investment by providing lower interest rates, whilst simultaneously encouraging borrowing.
- **More easily tracked**—Keeping track of printed money is much easier than keeping track of all government expenditure.

Disadvantages of Monetary Policy

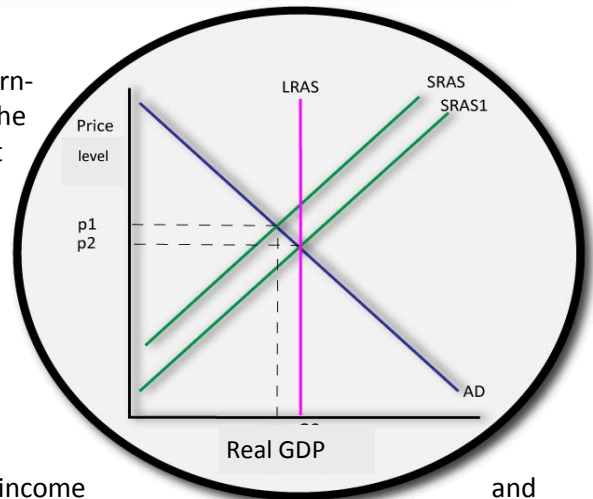
- **Time lags**—It may take a while for the effects of interest rates to filter down to the local population. By this time the recession/inflationary gap may be improving/worsening anyway. Also, it would take a substantial change to really make people borrow more or less.
- **Ineffective in recession**- In a recession, it could be argued that the media plays a role more important than the economy. If people **think** they are in a recession, they may not spend much at all, even if interest rates are low; their MPC is thus lower than in normal times. This makes this policy less effective.

Macroeconomics

Supply-side Policies—two types:

Interventionist supply-side policies are when the government actively intervenes in the market to manipulate the supply of goods or services. These include government training schemes, subsidies or protectionism.

Market-orientated supply-side policies—this is when the market is freed of any supply constraints in order to boost supply. This thus shifts our entire LRAS and SRAS curves out.



Market Orientated Supply-side Policies

1. Incentive Related Policies

- **Lowering income tax**—this leads to greater disposable income greater expenditure
- **Lowering business tax**—this allows investment to increase, thus boosting AD

2. Policies to promote competition

- **Privatization**—the UK privatized their railways. Private firms are profit orientated and thus work to reduce costs and provide lowest prices. Efficiency and competition increase. Government organizations are notoriously inefficient and bureaucratic as many in the industry see their pay as guaranteed and thus do not strive to cut costs and improve performance.
- **Deregulation**—reducing the laws and 'must-do's' for a company enable it to spend less money on these aspects, thus forcing fixed costs down. Economic regulation can be reduced by allowing firms to produce whatever, however much and for whomever, whilst social regulation (such as health and safety) can also be reduced.
- **Sub-contracting government organizations to the private sector (quasi-autonomous institutions)** - in many countries services such as rubbish removal are contracted out to the private sector. They have to achieve government aims but as they are usually performance related, they aim to lower costs.

3. Labour Market Reforms

- **Reducing benefits**—provides a more committed workforce
- **Lowering minimum wage**—lowers costs for firms, thus allowing them to supply more
- **Breaking up trade unions**—makes for longer hours and greater productivity. Less strikes

4. Trade Encouragement

- Increased trade leads to specialization and gains from comparative or absolute advantage. By leaving trading blocs, trade becomes easier

Interventionist (or industrial) supply side policies

- **Industrial policies**—Such as subsidies and infant industry protection—this gives them a chance whilst growing to compete against multinationals who benefit from being established.
- **Investments in Infrastructure**—providing better communication and transport lower supply costs + benefit everyone.
- **Investments in human capital**—govt training schemes improve efficiency and education and can be directed at specific areas. Examples include education and healthcare; a healthy workforce produces more, and for longer. Less must be then spent on health issues and the retirement age can be raised
- **Investments in New Technology**—investing in this provides greater RnD thus improving efficiency.
- **Job fluidity**—if workers have information available as to what jobs are available, then they are less likely to be unemployed for a long time and can also direct their studying

Macroeconomics

Type of Policy (market oriented supply)	Advantages	Disadvantages
Incentive Related	Decreasing income tax is argued to increase production as people work more/longer to make even more money	Have greater effects on AD than on AS. Tax cuts could thus cause inflation
	If business tax is reduced, there is more scope for research and development	People could choose to work less if paid more! Also, if MPC is low this won't work. See Laffer curve
	Laffer Theory states it works so long as it's done in the right place.	May worsen income distribution. Will only increase government revenue if benefits are greater than rising unemployment that it causes by shifting AD in.
Policies to promote competition	Privatisation creates more revenue for the government and less expense	Privatisation and contracting out can create unemployment as private firms lay off unnecessary staff
	Privatisation allows for a true allocation of resources—more should be supplied as there is increased competition	In many cases, firms that are privatized are natural monopolies and so the government replaces one monopoly with another
	Deregulation is cheap, requires no control and leads to instant results	Contracting out leads to a loss of government control whilst social deregulation is not in the interest of the public
Removing restrictions on market forces	Cheap and easy to perform	Information hints that paying workers more (not less) increases productivity
		Leaves workers at the mercy of employers and removes certain key rights
Trade Encouragement	See advantages of comparative advantage	(see disadvantages of comparative advantage)

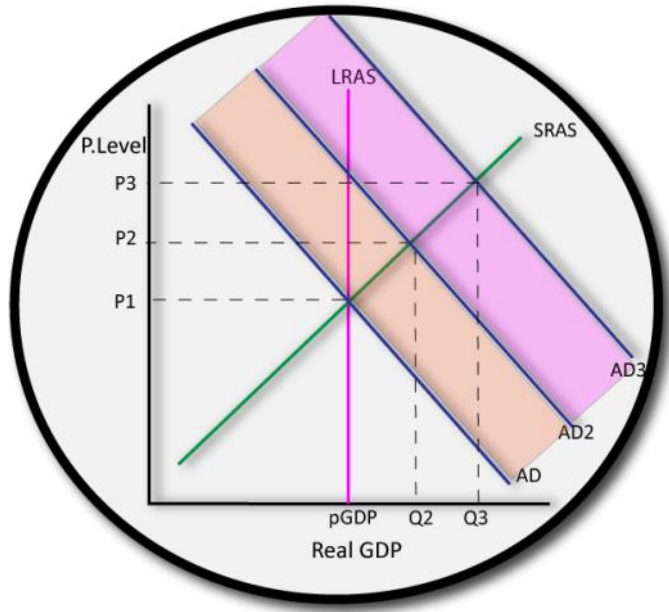
When assessing the strengths and weaknesses of a policy always think:

- **Who** is affected most? Rich? Poor? Government? Exporters? Importers? Fixed incomes?
- **When** will it take effect— what are the long-term benefits as opposed to just the short-term benefits
- **How** difficult is it to implement the policy? Is it cheap? Will it cause unemployment? Will it need training?
- **Does** your answer depend on anything else? The stage the economy is at etc

Macroeconomics

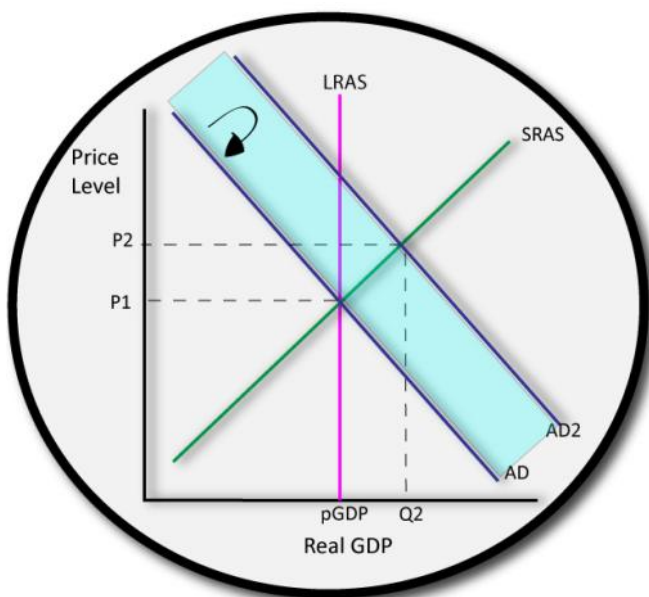
The Multiplier Effect

- Measures how great an influence an injection of money into the economy will have. Measures the relationship between injections and induced spending.
- To calculate it we use the formula $1/1-MPC$
- MPC is the marginal propensity to consume. This is how much of the extra income you receive you will spend
- MPC is offset by the MPS (marginal propensity to save), MPT (marginal propensity of tax) and MPI (marginal propensity spent on imports).
- $MPC+MPS+MPT+MPI = 1$. Every extra 1 dollar you get, these are the only 4 places it can go.
- The higher the MPC, the greater the multiplier. The greater the multiplier, the more economic growth is caused
- With fiscal policy, government spending and taxation reductions of the same value has different ef-



The Accelerator Theory

- Measures the relationship between Investment (which Keynesians see as the most important component of AD) and economic growth.
- States that initially increasing output causes much greater increase in Investment (and thus AD)
- If output is constant then investment falls
- If output falls, then investment falls by a greater rate
- This is because of depreciation. Assuming depreciation happens regularly and capital is fixed to output, then as output grows capital must increase AND depreciation must be seen to. Gross investment thus increases (e.g. = $x2$).
- If output remains constant, we continue to replace depreciated machinery but add no new capital. Gross Investment falls (= $x1$)
- If output falls, we use the spare machine no longer being used as replacement for depreciated capital. There is thus **no** Gross Investment (= 0).



The Crowding Out Theory

- Claims that if money used for expansionary fiscal policy is borrowed then its desired outcomes may automatically be offset by shifts inward of demand.
- This is because when money is borrowed internally (e.g. from banks), then Demand for money increases.
- Increased Demand for money raises interest rates
- Rising interest rates cause savers to put their money in banks, leading to fall in AD after the initial autonomous spending.
- If the effect of this theory is equal to the injection into the economy this is total crowding out
- If the effect of this theory is less than the injection into the economy this is partial crowding out.

Macroeconomics

Measuring Unemployment



- **Unemployment**—the number of people of working age actively seeking a job but currently without one. Unemployment can be measured as a number (usually by people who are register for transfer benefits)
- **Unemployment rate**—the percentage of people of working age actively seeking a job but currently without one out of the labour force. Calculated by dividing the total number of unemployed by the total labour force x 100.

Types of Unemployment and General Remedies

- 1) **Classical (Real Wage)** — when wages are set too high (above equilibrium price). On a microeconomic diagram we can show this as excess supply of labour. Production is now more expensive, so on an AD diagram, SRAS will shift inwards, causing a deflationary gap, and an increase in unemployment. This is disequilibrium unemployment as we are not in long-run equilibrium. Remedies include lowering the wage (neoclassical) or—if Keynesian—increasing AD to reach new equilibrium (as wages are ‘sticky-downwards’ for them).
- 2) **Cyclical**—when AD falls due to any reason. Called ‘cyclical’ as it is seen as a great cause of the Trade Cycle. We are not in long run equilibrium and so this too is disequilibrium unemployment. Remedies include demand-side policies (fiscal/monetary)
- 3) **Structural**—when the skills of a worker in an economy do not match the jobs available (e.g. coal miners in the UK). This can occur at long-run equilibrium and so is part of the natural rate of unemployment. Remedies include increasing the LRAS (by increasing FOP, increasing quality of FOP’s or technology).
- 4) **Frictional**—when workers are between jobs. This can occur at long-run equilibrium and so is part of the natural rate of unemployment. Remedies include increasing the LRAS (by increasing FOP, increasing quality of FOP’s or technology).
- 5) **Seasonal**—when workers are unemployed due to the time of year or specific kind of job. For example ski instructors in the summer period. This can occur at long-run equilibrium and so is part of the natural rate of unemployment. Remedies include increasing the LRAS (by increasing FOP, increasing quality of FOP’s or technology).

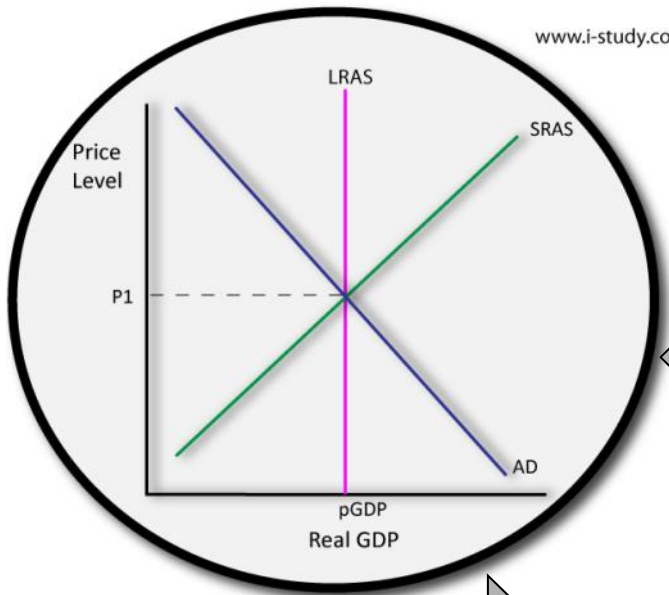
Specific solutions to Unemployment

- **Real wage**—reduce minimum wage, reduce power of trade unions, (often seen as unethical. Doesn’t work for Keynesians)
- **Cyclical**—increase AD with expansionary fiscal or monetary policies (esp. if Keynesian)
- **Structural**—increase training, education, public jobs, nationalization
- **Frictional**— increase availability and mobility of workforce—internet, communications, roads, transport
- **Seasonal**—encourage diversification, subsidize training and education, improve transport

Macroeconomics

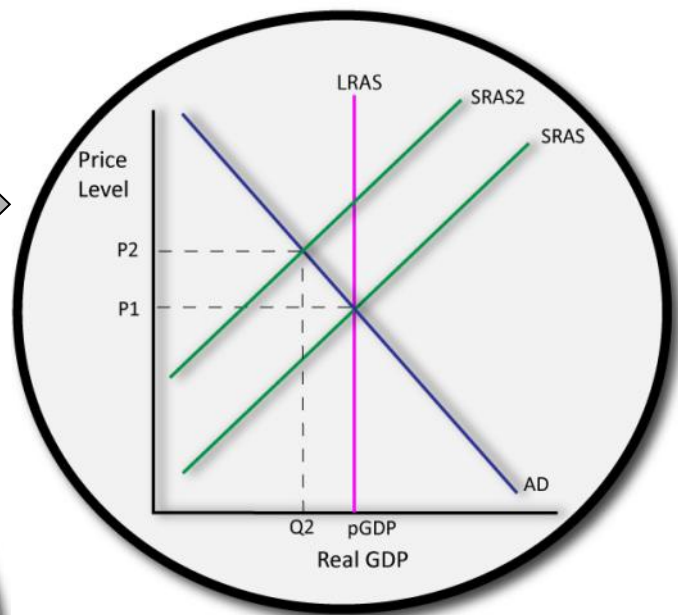
Equilibrium and Disequilibrium Unemployment

- NRU is the natural rate of unemployment; unemployment that occurs when our economy is in long-run equilibrium (at price level p_1 in first diagram below). It is thus **equilibrium unemployment**. It includes three types: structural, frictional, seasonal
- Disequilibrium unemployment** occurs when we are in a recessionary gap. It can be defined as unemployment that occurs when the economy is not in long run equilibrium. It includes two types: real wage and cyclical (in both cases, we move away from our long-run supply curve) as seen below

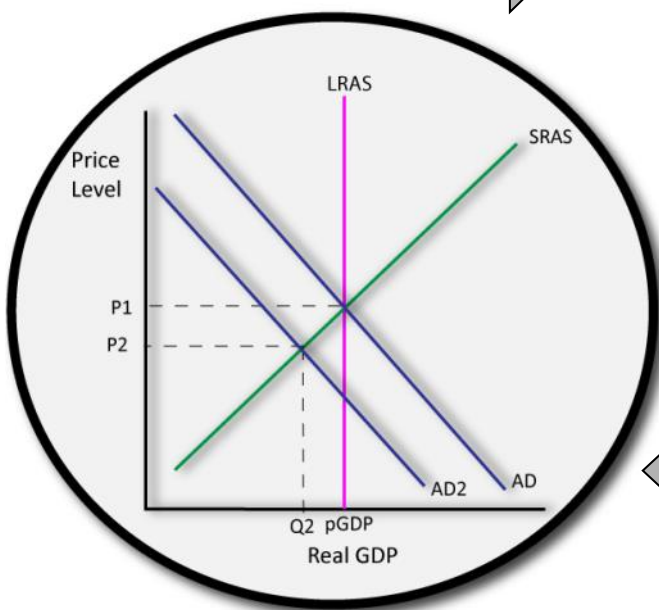


**Natural Unemployment /
Equilibrium Unemployment
Exists at $pGDP$**

**Disequilibrium Unemployment as
Real Wage
Exists at Q_2**



**Disequilibrium Unemployment as
Cyclical
Exists at Q_2**



Macroeconomics

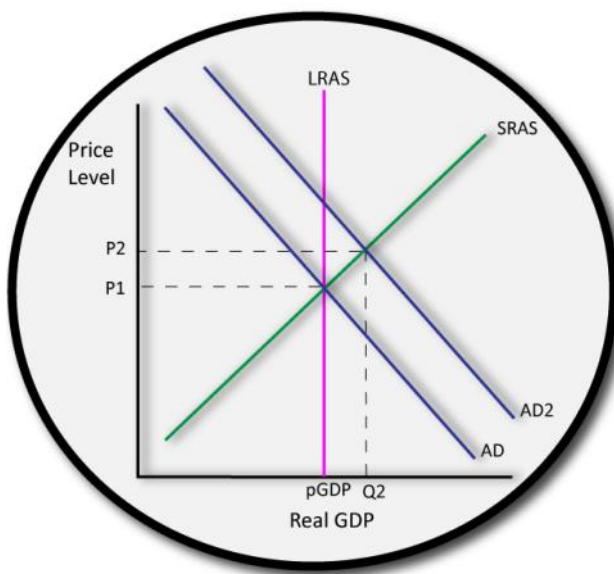
Measuring Inflation

- This is done using the CPI (Consumer Price Index)
- A hypothetical basket of goods and services is collected (around 500 objects of regular use for the average household)
- Their prices are recorded starting from a **base year**
- **Base Year** (regular year) is given the Price Index of 100
- Next year the same thing is done for the same basket of goods and services. The % change is added to/from the base year e.g. 110.
- Weighting is also added at this stage (by multiplying price x value we get weighting as that shows us how important each good is)

Problems

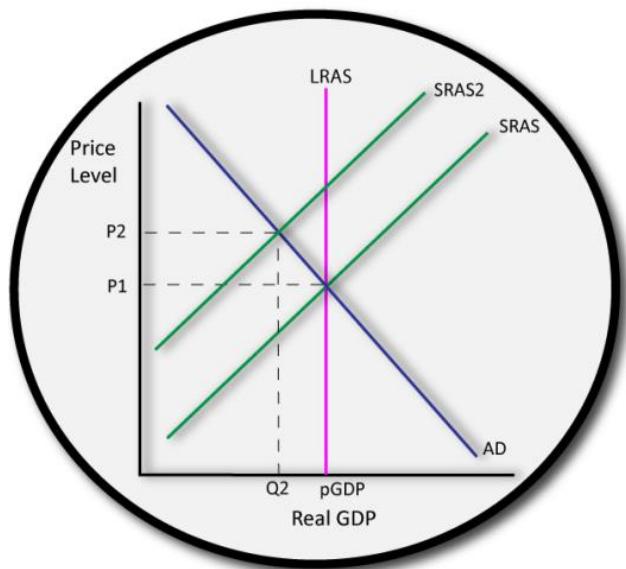
- Cannot compare across base years
- Cannot compare different baskets / internationally
- Is made for the 'average house hold'

Types of Inflation



1. Demand-Pull—this is when Aggregate Demand increases for any reason, causing prices to rise as producers realize they can increase the price of their products as more are now wanted.

2. Cost-Push—this is caused by a decrease in Aggregate Supply for any reason, usually due to increased wages. Output falls and so prices rise as they are now more scarce.



3. **Printed**—this is caused by printing more money (monetary policy). As $MV=PQ$ then when M increases, so too does P .
- M =Money supply, V =Velocity (times spent), P =Price, Q =Quantity of Goods
 - $MV = PQ$ is same as saying Total National Income = Total GDP
 - V is constant (according to monetarists), whilst Q is also constant (suppliers increase the price if people have greater incomes—they don't produce more). M and P are thus directly proportional
 - Can be shown on a market diagram for money (money increases, interest rates fall, borrowing increases, AD falls)

Costs of Inflation

Decrease in Purchasing Power, Increase in Income Inequalities, Menu Costs, Social Unrest, Lack of investment, Uncertainty, Loss of exports, exchange rate depreciation (in long run)

Macroeconomics

Solving Inflation

- Can be done through decreasing AD (deflationary fiscal policy) or Increasing AS (supply-side policies)
- The strengths and weaknesses of these policies are discussed earlier, and must be looked at in reference to the situation at hand



Hyperinflation

- This is defined as a sustained **rapid** increase in the prices of goods and services in a country over a given time period (usually more than 50% per month)
- Costs are similar to inflation but much more extreme: high menu costs, abandonment of money in favour of barter, capital flight, collapse of investment, eradication of savings, loss of purchasing power, large social unrest, collapse of production
- Can be shown through $MV=PQ$
- Examples include Zimbabwe 2008, Germany 1920s.

Deflation

- This is a general fall in the prices of goods and services in a country over a given time period)
- Either caused by falling AD or increasing AS (the latter is generally a good thing!)
- Costs include: Menu Costs, loss of income for lenders, loss of investment, currency depreciation, decreased imports)

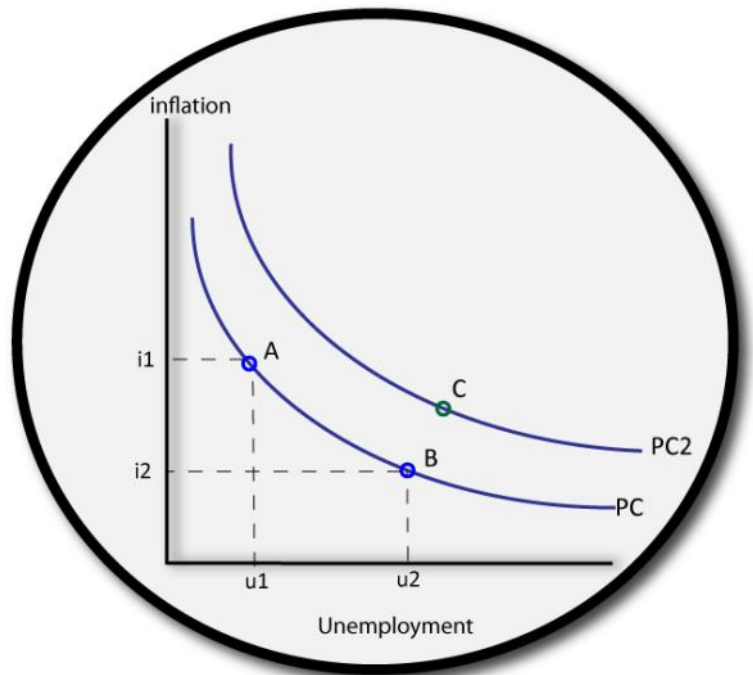
Disinflation

- This is described as a fall in the level of inflation. Price levels are still rising, but at a slower rate. For example if inflation fell from 10% to 8%.

Macroeconomics

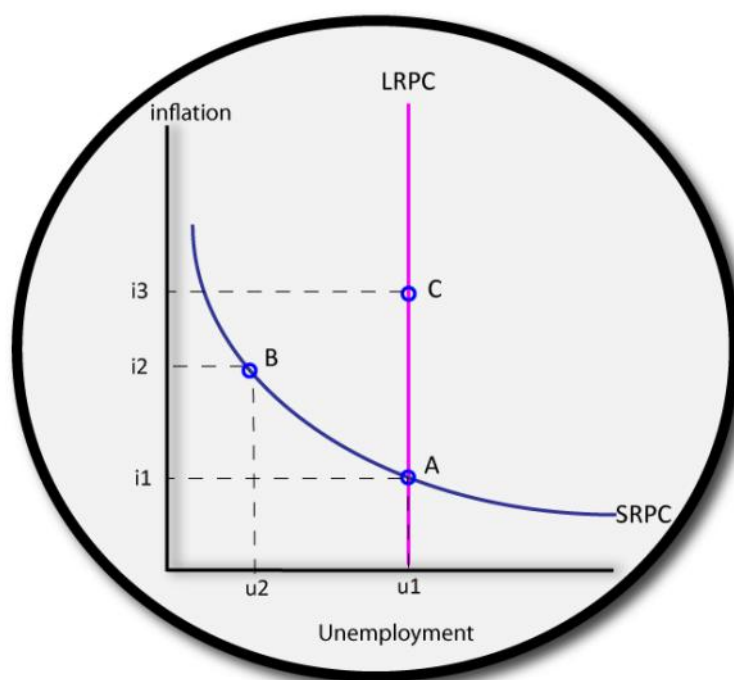
Short Run Phillips Curve

- Attempts to explain the relationship between unemployment and inflation.
- Traditional Curve—invented by AW Phillips—claims there is an inverse relationship
- Claims SRAS is fairly stable, but AD is not
- Any increase/decrease of AD = a contraction/extension along the Phillips Curve (e.g. A to B)
- After Stagflation of 70s and 80s, unemployment AND inflation rose (increase in SRAS)
- Shifts in Phillips Curve were introduced (upwards for stagflation e.g. B to C where we get an increase in both)



Long Run Phillips Curve

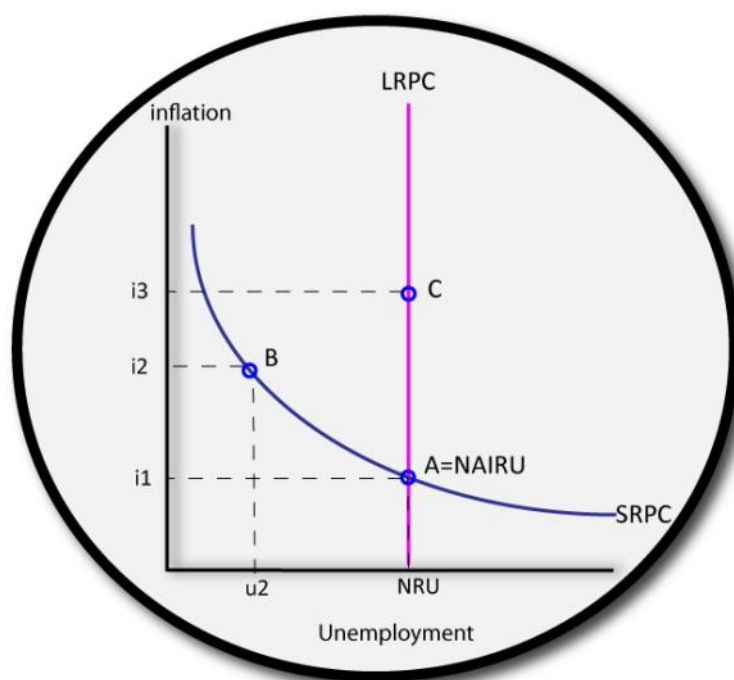
- This attempts to align the Phillips Curve with Neoclassical thinking
- Since an economy always returns to equilibrium in the long run, natural unemployment (for neoclassicalists) remains the same in the long run, even if Aggregate Demand changes.
- Consider this scenario: AD increases (so we contract along the Phillips curve - Unemployment falls, Inflation rises). But neoclassicalists say that wages will adjust to meet the new increase in prices. SRAS falls, so we get higher unemployment and higher inflation (a shift in the Phillips Curve essentially).
- We thus end up with the same unemployment as previously, but at a different inflation rate
- As a result, we can introduce the Long Run Phillips Curve as the economy will always situate itself somewhere along this line, according to neoclassical thinking.



Macroeconomics

The Natural Rate of Unemployment (NRU) vs. (NAIRU) Non-Accelerating Inflation Rate of Unemployment

- Natural Rate of Unemployment is the percentage of the labour force that is unemployed when the economy is in long-run equilibrium, and achieving potential GDP.
- It is a neoclassical concept and can occur at any rate of inflation (since in the long run, wages change so SRAS changes too)
- E.g. on the diagram below, we are in long-run equilibrium and have a NRU of say 3%.
- AD increases (we assume this happens because it is more volatile than SRAS and when SRAS increases LRAS usually does too). In the short run we move into an inflationary gap (Point B).
- We now have unemployment that is less than the natural rate.
- In the long run, wages rise so costs of production rise so SRAS falls (Point C).
- We now have a natural rate of unemployment again (3%)
- However we also have a new price level. Inflation has risen.
- The NRU thus always reverts back to its previous rate but inflation can change.
- NAIRU is the non-accelerating inflation rate of unemployment
- It is a Keynesian concept
- It claims that the natural rate of unemployment only occurs at one rate of inflation, not at many rates, unlike the NRU
- This is because wages do not change in the long run, and are sticky downwards.
- When AD increases from the potential GDP level of output, we enter an inflationary gap. Wages do not necessarily change
- Unemployment is less than the natural rate.
- In order to get back to the natural rate of unemployment we need to be at the point in our economy where potential GDP was. This point has one inflation rate linked to it (in our example 5%). Deflationary fiscal policy is needed here.



Macroeconomics

Taxation as a Re-distributor of Income

- Three ways income can be redistributed
 1. Transfer Payments
 2. Subsidization/Provision of Merit Goods
 3. Taxation

Tax Types

- 1) **Direct**—tax on income or wealth. Shifts AD
- 2) **Indirect**—tax on goods and services. Also called tax on expenditure. Shifts SRAS e.g. VAT

Tax Systems

- **Progressive**—as incomes increase, tax rate bands increase (value of tax increases)
- **Regressive**—as incomes increase, tax rate bands decrease (value of tax may still increase) Note that all indirect taxes are also regressive as they are less of a proportion of rich people's earnings, whether flat rate or ad-valorem
- **Proportional**—as incomes increase, tax rate bands remains the same (value of tax does increase though)

How Progressive Taxes Work



With a progressive taxation system, citizens are put into 'income earning bands' and charged taxation according to these bands. The higher your income, the greater percentage of taxation that you need to pay on income in a particular bracket. For example, the government may set bands as in the table below.

If Jo Bloggs earned \$6 000 a year, Tim Timmins earned \$28 000 a year and Gordon Bennett earned \$110 000 a year they would all pay different amounts of tax:

- Jo Bloggs would pay \$600 (5% of \$6000)
- Tim Timmins would pay \$2 300 (5% of \$10 000+ 10% of \$18 000)
- Gordon Bennett would pay \$23500 (5% of \$10 000 + 10% of \$80 000 + 50% of \$20 000)

	Tax Band 1	Tax Band 2	Tax Band 3
Income per Year	< \$10 000	\$10 000—\$90 000	> \$90 000
% Tax	5%	10%	50%

Problems with Taxation

- 1) Too high and it disincentives workers
- 2) Indirect tax often hurts those on lowest incomes most
- 3) Is not a true representation of allocative efficiency
- 4) Leads to a fall in AD—and thus a potential rise in unemployment
- 5) Can lead to a 'dependency' culture if just directly reallocated to poorest members of society
- 6) Trickle-down theory may not work in reality (thus regressive taxes don't work)

Macroeconomics



The Lorenz Curve

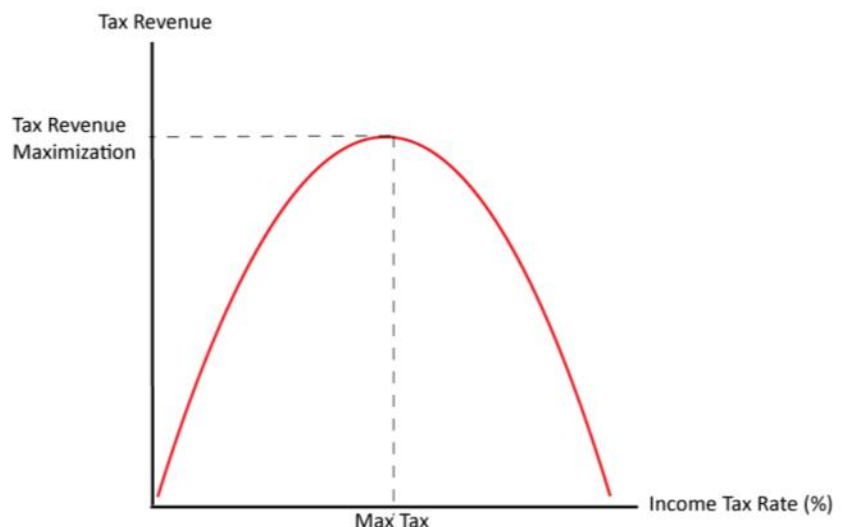
- Is an attempt to express income equalities in a country on a diagram
- Economies are split into 'quintiles' (or fifths) according to how much % of national income they earn
- Poorest sector is first 20%, richest is last.
- If 80% of the population only receives, say, 10% of the national income, then we know that 20% earns a whopping 90% of the national income—it is thus very unequal.
- Increasing income equalities (through tax, welfares, provision of merit goods etc) shifts Lorenz in.

The Gini Co-efficient

- Expresses the Lorenz Curve in a mathematical value between 0-1
- Calculated by dividing the area between Line of Perfect Income Equality and Lorenz Curve, over the entire area under the LoPIE
- The closer the result is to 0, the more equal the income distribution of that country.

The Laffer Curve

- Created by Arthur Laffer, this attempts to explain the idea that a decrease in taxation—after a certain point—leads to an increase in tax revenue for the government
- The natural relationship between tax and tax revenue is that as tax increases so does revenue
- Laffer claims this is true until the economy reaches a point where taxes are at their maximum tolerability (tax max)
- After this point, if taxes are increased, people become disheartened, decide to work less (as they feel there is no point since their money disappears into taxes). Productivity falls, so SRAS falls
- Unemployment thus increases, causing tax revenue to fall.
- When the economy is anywhere beyond the point of maximum tax, they should thus reduce tax to increase tax revenue, seen on the diagram as people become more productive



Macroeconomics

Test-Yourself Questions

1. Discuss the relationship between interest rates and unemployment, using **three** diagrams [8]
2. Describe how the Circular Flow of Income and the Trade Cycle relate [6]
3. Evaluate the different ways to measure economic development [15]
4. Explain the components of Aggregate Demand and Aggregate Supply [10]
5. Evaluate the importance of the differences between Neoclassical and Keynesian economists [15]
6. Analyse the implications of using fiscal policy to correct an inflationary gap [12]
7. Explain the difference between equilibrium and disequilibrium unemployment [8]
8. Using an example, describe the relationship between unemployment and inflation for:
 - A) Keynesians
 - B) Neoclassicalists [15]
9. Describe the different forms of taxation
10. Evaluate which form of inflation is most harmful to an economy, and explain its possible effects
11. 'The strengths of fiscal policy outweigh the strengths of supply-side policies.' Discuss [15]

Your Notes

Our Tips:

- 1) Draw the diagrams well—they tell most of the answers you need!
- 2) Revise, revise, revise. We know when you're blagging.
- 3) 'Evaluate' means *say something: have an argument*. Don't just list and explain.
- 4) Use the website: it goes into more depth. Use your books too!